The State-owned land at the Johnston Community College campus in Smithfield hosts a nesting cluster of the Federally Endangered red-cockaded woodpecker. The stand of pines where the cluster is located is considered to be an extension of the Smithfield Pine Flatwoods site (located on the opposite side of I-95).

The N.C. Department of Transportation owns land in the floodplain below Howell Woods, just west of Richardson Bridge Road. However, this is a borrow-pit site where sand/dirt is obtained for various needs. This department owns/administers lands alongside all of the public roads in the county. It is likely that a few rare plant sites lie at least partly on NC DOT roadsides. Some wetlands, such as along US 70 Bypass at the Neuse River, are likely owned by this department.

The county apparently owns land in floodplains surrounding the Johnston County Airport. The Reedy Branch Floodplain is located on public land, but it has no special protective measures that might preclude timber harvest or other actions that might damage the site.

The City of Wilson owns Buckhorn Reservoir, as well as some buffer lands around the lake and along Moccasin Creek. The reservoir is considered as being of County significance because of the location of a nest of the bald eagle, a Federally Threatened species.

There are undoubtedly other public lands in the county, such as local parks. However, the above sites are known to be in public ownership that are either in protected status and/or contain significant natural heritage features.

The Triangle Land Conservancy (TLC), a private non-profit conservation organization, protects lands over the six-county Region J area – Johnston, Wake, Durham, Orange, Chatham, and Lee. TLC owns outright several small tracts and holds a conservation easement in Johnston County. Two of these tracts have significant natural communities. The most significant is a 10-acre tract at Flower Hill along Moccasin Creek; this site, which contains a disjunct stand of Catawba rhododendron, is considered as Regionally significant. TLC also owns the 5-acre Montgomery Heath Bluffs, located on the banks of Poplar Creek just north of West Smithfield. This bluff, which contains a dense stand of mountain laurel, was severely impacted by Hurricane Fran in 1996, such that most of the canopy trees were killed. The site is now considered of Local significance. This organization also owns 54 acres where Buffalo Creek flows into Middle Creek, and this tract acts as an important buffer for the very significant waters of Middle Creek.

Two biologically significant sites are owned by scouting organizations. The Boy Scouts of America own Camp Tuscarora in the southern part of the county, adjacent to Mill Creek. This important biological area contains sandhills, steep bluffs and ravines, and some floodplain along Mill Creek. The Girl Scouts of America own Camp Atkinson, located in the northern part of the county alongside the Little River. This camp contains a good-quality upland hardwood forest, though much of the forest land at the camp was hard hit by Hurricane Fran.